



**NOAA Teacher at Sea
Tara Treichel
Onboard NOAA Ship NANCY FOSTER
April 15 – 27, 2008**

NOAA Teacher at Sea: Tara Treichel

NOAA Ship NANCY FOSTER

Mission: Lionfish Survey Cruise

Date: Saturday, April 26, 2008

Geographical area of cruise: Onslow Bay, Atlantic Ocean off of coast of N. Carolina

Weather Data from the Bridge

Visibility: 10 n.m.

Wind: 11 knots

Waves: 1-2 feet

Ocean swells: 2-4 feet

Sea temperature: 23.5

Air temperature: 22.0

Science and Technology Log

In addition to the Lionfish survey, the other research that is being conducted while aboard the NANCY FOSTER is benthic habitat mapping of the ocean floor. This is accomplished using highly sophisticated, computerized multi-beam SONAR technology. Two survey technicians aboard the ship are responsible for running and monitoring the system, which is run all through the night. The operators make sure that the system is recording data properly and that the ship stays on course (within about 5 meters), and process the data as it is recorded. The course is set and followed, lawnmower style, back and forth along long narrow parallel lines, producing a beautiful rainbow colored map coded for "depth by color," where red is high and blue is low. After five nights of mapping, the white digital nautical chart contains five tiny rainbow swatches, each one representing about 10 square miles of mapped space. Each year the research team adds to the swatches, until one day perhaps the entire bay floor will be mapped. Scientists later use the maps to support their research; in this case, Paula used them to determine where to dive. With countless miles of ocean floor (much of which is sand, or poor fish habitat) and limited time and research budgets, the maps are a critical part of the research effort.



One of the Survey Technicians operates the Multi-Beaming mapping system.

There are a lot of variables such as temperature and salinity that can influence the transmission of the sound waves produced by the multi-beam sonar to measure seafloor depth. In order for the data to be as accurate as possible the survey technicians need to measure these variables throughout the water column using a CTD (conductivity (salinity), temperature and depth). They conduct three CTD 'casts' a night by first lowering and raising the CTD on a long cable that is controlled by a winch.



Tara holds up a specimen that some of the scientists said was the biggest Spiny Lobster they had ever seen!

Personal log

Today, the Chief Engineer caught a Wahoo off the stern of the boat. Wahoo! Can you think of a fish with a cooler name? It's a cool fish, too, sleek and streamlined, with large jaws and a loud stripy pattern on blue gray skin. It was perfect timing, since a barbeque was planned for our last afternoon at sea. The fish is nearly all muscle, and yielded 25 steaks, almost enough for each one of our full ship of 35 people aboard. How was it, you ask? Delicious! The scientists also caught several large Spiny Lobsters, a Scamp (a Grouper), Hogfish, Sea Bass, and of course, many Lionfish. In addition, they saw a Mola Mola (Sunfish) and several Loggerhead Turtles.